

Response

Applicant: Lauinger, Geoffrey A., et al.

Serial No.: 10/690,439

Filed: October 21, 2003

Docket No.: 10388US01

Title: A METHOD OF MANUFACTURING A MEDIA REFERENCE SURFACE FOR USE IN A FLEXIBLE
DATA STORAGE CARD**RECEIVED**
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IN THE CLAIMS

1. (Original) A method of manufacturing media reference surfaces for use in a flexible data storage card comprising:

providing a metal sheet having a first side and a second side, at least one side having an optically smooth surface characterized by an average surface roughness not greater than 8 micro-inch; and

processing the metal sheet into a plurality of media reference surfaces, each media reference surface characterized by having at least one curved edge adjacent the optically smooth surface;

wherein the step of processing the metal sheet is characterized by an absence of hand polishing.

2. (Original) The method of claim 1, wherein providing a metal sheet includes providing a metal sheet wherein the optically smooth surface is characterized by an average surface roughness not greater than 4 micro-inch.

3. (Original) The method of claim 1, wherein providing a metal sheet includes providing a metal sheet wherein the optically smooth surface is characterized by an average surface roughness in the range of 0.5 to 4 micro-inch.

4. (Original) The method of claim 1, wherein providing a metal sheet includes providing a metal sheet wherein the optically smooth surface is characterized by an average surface roughness not greater than 1 micro-inch.

5. (Original) The method of claim 1, wherein the step of processing the metal sheet provides the at least one curved edge with a radius of curvature in the range of 0.001 to 0.007 inch.

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6. (Original) The method of claim 5, wherein the curved edge is a leading edge of the media reference surface.
7. (Original) The method of claim 1, wherein the step of processing the metal sheet includes shearing the metal sheet with a die and a punch to form the plurality of media reference surfaces.
8. (Original) The method of claim 7, wherein shearing the metal sheet includes die rolling the at least one edge.
9. (Original) The method of claim 7, wherein shearing the metal sheet includes providing a gap between the die and the punch.
10. (Original) The method of claim 9, wherein providing a gap includes providing a gap having a spacing between 0.005 inch and 0.0001 inch.
11. (Original) The method of claim 1, wherein the step of processing the metal sheet into the plurality of media reference surfaces includes cold forming the metal sheet.
12. (Original) The method of claim 11, wherein cold forming includes coin finishing.
13. (Original) The method of claim 1, wherein the step of processing the metal sheet into the plurality of media reference surfaces includes photo-etching.
14. (Original) The method of claim 1, wherein processing the metal sheet into the plurality of media reference surfaces includes processing the metal sheet into a plurality of head zero components.

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15. (Original) The method of claim 1, wherein providing the metal sheet includes providing an elongate metal sheet having a length that is greater than a width of the metal sheet by a factor of approximately 10.

16. (Original) The method of claim 1, wherein providing the metal sheet includes providing a coiled roll of metal sheeting.

17. (Original) The method of claim 16, wherein providing the coiled roll of metal sheeting includes providing a coiled roll of metal sheeting having a protective coating in contact with the optically smooth surface.

18. (Original) The method of claim 1, wherein the step of processing the metal sheet includes leaving at least one attachment edge on each of the plurality of media reference surfaces such that adjacent media reference surfaces are conjoined.

19. (Original) The method of claim 18, further comprising:

severing the conjoined media reference surfaces; and

disposing an individual media reference surface into a flexible data storage card.

20. (Original) The method of claim 18, further comprising post-processing the conjoined media reference surfaces.

21. (Original) The method of claim 20, wherein the post-processing includes electro-polishing the conjoined media reference surfaces.

22. (Original) The method of claim 1, wherein the media reference surfaces are configured for use in a StorCard® flexible data storage card.

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23. (Withdrawn) A method of manufacturing media reference surfaces for use in a flexible data storage card comprising:

providing a length of metal sheeting, the metal sheeting having a first side and a second side, at least one side providing an optically smooth surface;
shearing the metal sheeting with a die and a punch to form the media reference surfaces, each media reference surface having a leading edge and a trailing edge;
wherein the shearing is configured to die roll at least the leading edge.

24. (Withdrawn) The method of claim 23, wherein the step of shearing the metal sheeting imparts a radius of curvature to the leading edge in the range of 0.001 to 0.007 inch.

25. (Withdrawn) The method of claim 23, wherein the step of shearing the metal sheeting imparts a radius curvature to the trailing edge in the range of 0.001 to 0.007 inch.

26. (Withdrawn) The method of claim 23, wherein the step of shearing the metal sheeting includes providing a gap between the die and the punch.

27. (Withdrawn) The method of claim 26, wherein providing the gap includes providing a gap having a spacing between 0.005 inch and 0.0001 inch.

28. (Withdrawn) The method of claim 23, wherein the optically smooth surface has an average surface roughness not greater than 8 micro-inch.

29. (Withdrawn) The method of claim 23, wherein the step of shearing the metal sheets causes each media reference surface to experience a mechanical yield at the leading edge prior to a mechanical fracture at the leading edge.

30. (Withdrawn) The method of claim 23, further comprising cold forming the leading edge.

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31. (Withdrawn) The method of claim 30, wherein cold forming includes coin finishing the leading edge.

32. (Withdrawn) The method of claim 23, further comprising electro-polishing the leading edge.